



Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Dark Creek

Waterbody Segment at a Glance:

County: Randolph
Nearby Cities: Moberly
Length of impairment: 11 miles
Pollutant: Sulfate
Source: Crutchfield Abandoned Mine Land (AML)



TMDL Priority Ranking: Low

State map showing location of Dark Creek watershed

Description of the Problem

Beneficial uses of Dark Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption

Use that is impaired

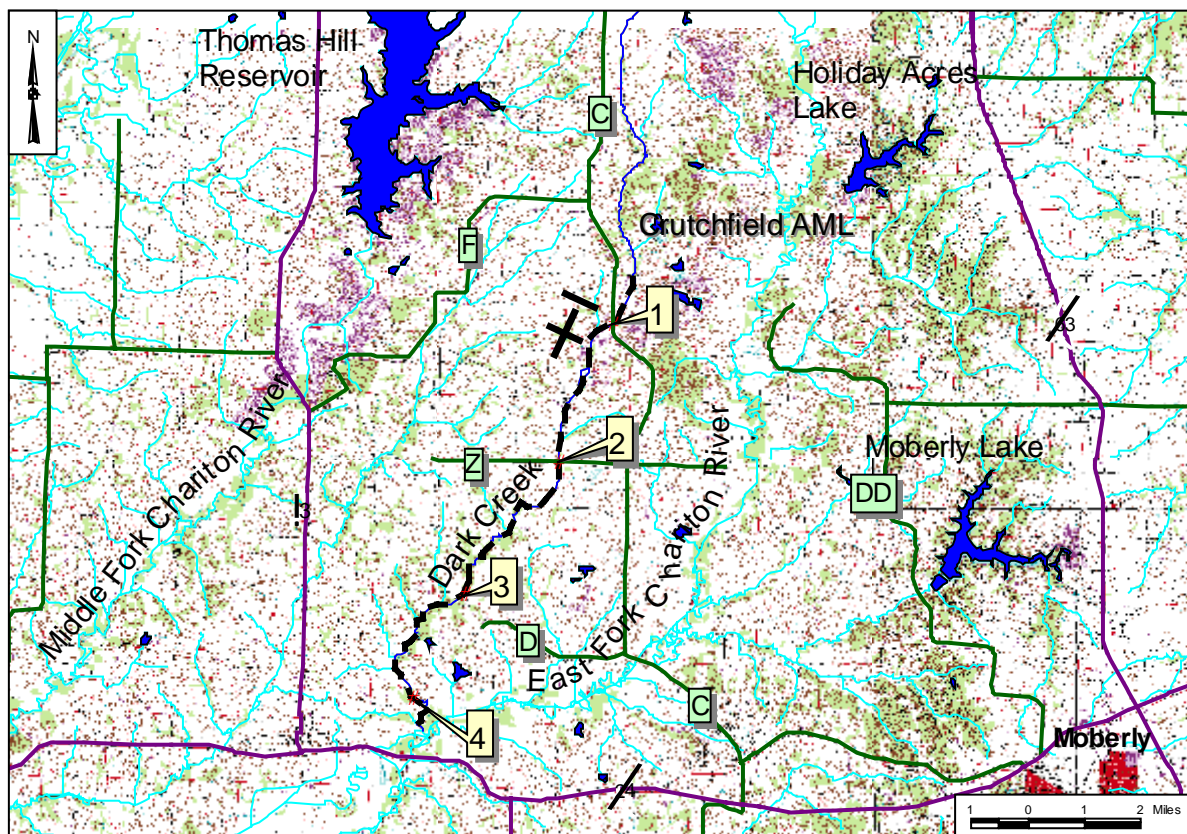
- Protection of Warm Water Aquatic Life

Standards that apply

- Missouri's Water Quality Standards (WQS), 10 CSR20-7.031 (4)(E), state that water contaminants shall not cause pH to be outside of the range of 6.5-9.0 Standard Units (SU). Water contaminants shall not cause pH to be outside of the range of 6.5-9.0. 10 CSR 20-7(4)(E).
- Sulfate and chloride are linked together in the WQS. Section (4)(L)1 states that the concentration of chloride plus sulfate shall not exceed 1,000 milligrams per liter (mg/L or parts per million) for protection of aquatic life.

Several hundred acres of abandoned lands strip mined for coal near Darksville, in Randolph County, drain into Dark Creek. Sulfide minerals, commonly found in coal and the surrounding rock, oxidize when exposed to the air and are subsequently dissolved by surface flows and groundwater. This weathering process results in large amounts of sulfate in surface runoff and shallow groundwaters being discharged to Dark Creek. Freshwater aquatic life cannot tolerate large amounts of dissolved substances in water. The Missouri water quality standard for dissolved substances is 1,000 mg/L of sulfate plus chloride. Levels of chloride in Missouri streams are typically much less than 100 mg/L, so most dissolved solids problems are related to high levels of sulfate. Sulfate levels in Dark Creek often exceed 1,000 mg/L.

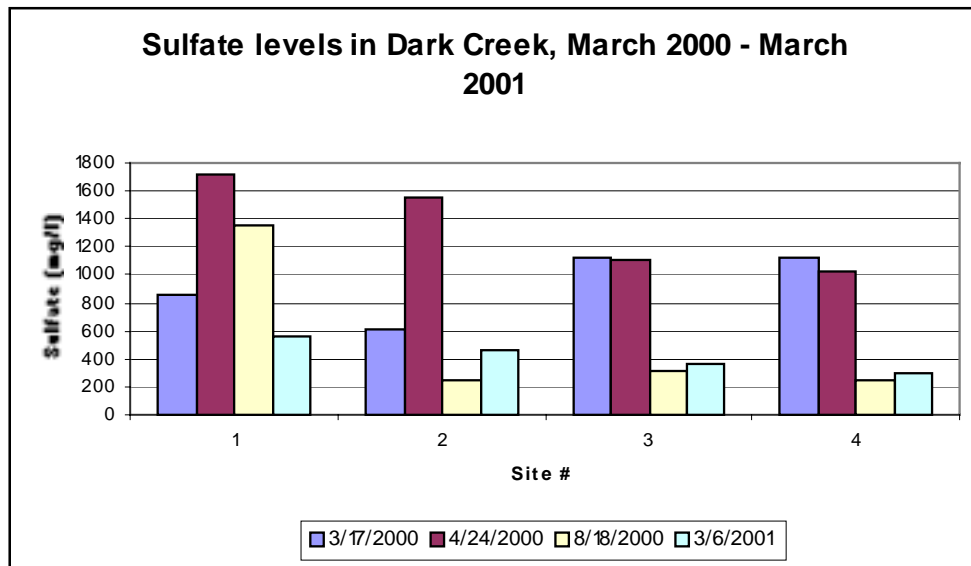
Map of the Impaired Segment of Dark Creek, Randolph County, and Sampling Sites



Impaired segment
 Sample site
 → Direction of Flow

Site Index

- 1 – Dark Creek 0.1 mile below Crutchfield AML
- 2 – Dark Creek 3 miles below Crutchfield AML
- 3 – Dark Creek 6 miles below Crutchfield AML
- 4 – Dark Creek 8 miles below Crutchfield AML



Source: Missouri Dept. of Natural Resources

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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